

<sup>B2</sup>  
B2  
chromosome 4 between map units 40 and 85.

---

<sup>B3</sup>  
B3  
12. (Amended). The cross-incompatible maize plant of claim 11 wherein said *Tcb* locus comprises at least one gene which encodes for a silk effect function in said plant.

13. (Amended). The cross-incompatible maize plant of claim 11 wherein said *Tcb* locus comprises at least one gene which encodes for a pollen effect function in said plant.

14. (Amended). The cross incompatible maize plant of claims 11, 12 or 13 further comprising at least one modifier gene within its genome.

15. (Amended). A cross-incompatible maize plant comprising a TCB gene cluster within its genome and which (1) fails to set seed when pollinated by plants lacking the TCB gene cluster but sets seed when pollinated by plants carrying the TCB gene cluster; and (2) maintains functional pollen and sets seed when pollinated by itself or causes other maize plants to set seed when pollinated by said plant.

---

<sup>B4</sup>  
B4  
21. (Amended). The cross-incompatible maize plant of claim 15 wherein said gene cluster is located on the short arm of chromosome 4 between map units 40-85.

---

<sup>B5</sup>  
B5  
25. (Amended). The cross-incompatible maize plant of claim 22 wherein said *Tcb* locus comprises at least one gene which encodes for a pollen effect function in said plant.

---

<sup>B6</sup>  
B6  
27. (Amended). A cross-incompatible maize plant comprising a TCB gene cluster with its genome wherein said TCB gene cluster is from plant W22-TCB, and further wherein seed of W22-TCB has been deposited as ATCC No. PTA-1601.

28. (Amended). The cross-incompatible maize plant of claim 27 wherein said gene cluster is located on the short arm of chromosome 4 between map units 40-85.

---

<sup>B7</sup>  
B7  
32. (Amended). The cross-incompatible maize plant of claim 29 wherein said *Tcb*

3p  
ant locus comprises at least one gene which encodes for a pollen effect function in said plant.

---

39. (Amended). A process for obtaining an inbred maize plant, which when crossed with a second inbred maize plant, produces a hybrid maize plant which is cross-incompatible and contains a TCB gene cluster within its genome, the process comprising the steps of:

a) selecting a first donor parental maize plant from a population of maize plants, wherein said first donor parental maize plant is cross-incompatible and contains a TCB gene cluster;

b) crossing said selected first donor parental maize plant with a second parental maize plant containing genes which encode for desirable traits in hybrid combination;

c) collecting the seed resulting from the cross in step b);

d) planting and growing the seed collected in step c) under plant growth conditions;

e) screening the resulting plant population for the presence of the TCB gene cluster identified in step (a); and

f) selecting plants from said population having the TCB gene cluster for cross-incompatibility for further crossings and screenings until a line is obtained which is homozygous for the TCB gene cluster for cross-incompatibility to provide such a gene cluster in an inbred to be used in hybrid combination.

40. (Amended). The process of claim 39 wherein said gene cluster is located on the short arm of chromosome 4 between map units 40-85.

41. (Amended). The process of claim 39 wherein the first donor parental maize plant further comprises a *Tcb* locus.

44. (Amended). The process of claim 41 wherein said *Tcb* locus comprises at least one gene which encodes for a pollen effect function in said plant.

---

3<sub>10</sub> 47. (Amended). A cross-incompatible inbred maize plant comprising a TCB gene cluster produced by the process of claim 39.

48. (Amended). A process for producing a cross-incompatible hybrid maize plant exhibiting a TCB trait, the process comprising the steps of:

a) crossing the inbred maize plant of claim 47 with a second maize inbred line comprising genes encoding desirable phenotypic traits to produce a segregating plant population; and

b) collecting the hybrid seed resulting from the cross in step a.

49. (Amended). The process of claim 48 wherein the second maize inbred line is cross-incompatible and comprises a TCB gene cluster within its genome.

59. (Amended). A process for selecting a cross-incompatible hybrid maize plant exhibiting a TCB trait, the process comprising the steps of:

analyzing each plant from a population of hybrid maize plants for those plants exhibiting a TCB trait.

64. (Amended). The process of claim 61 further comprising the step of analyzing the DNA of each plant from said population for at least one gene which encodes for a pollen effect function in said plant.

67. (Amended). A process of controlling hybridization of a maize plant in a field, the process comprising the step of planting in a field a cross-incompatible maize plant of claims 1, 4, 5, 15, 16, 17, 27, 34, 35, 47, 50, or 66.

68. (Amended). A process of controlling hybridization of inbred maize plants being used in hybrid seed production, the process comprising the step of planting in a field at least one cross-incompatible inbred maize plant of claims 4, 16, 34, or 47 with at least one second inbred maize plant and crossing the cross-incompatible inbred maize plant with

BB  
ent

the second maize inbred maize plant to produce a hybrid maize seed.

---

☑ Please add new claims 69-72 as follows: ]

69. (New). Inbred maize seed designated W22-TCB having A.T.C.C. No. PTA-

1601.

70. (New). A cross-incompatible maize plant produced by growing the seed of  
claim 69.

71. (New). Pollen of the plant of claim 70.

72. (New). An ovule of the plant of claim 70.

---

BM